The social and budgetary impacts of recent social security reform in Belgium

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1. Recent social security reform in Belgium
2. It takes two to tango: the relations between MIDAS and MALTESE
3. The microsimulation model MIDAS : ready to tango
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First-pillar pensions in Belgium

- Separate Bismarckian PAYG schemes for employees in the private and public sectors and self-employed. Civil servants pensions are regarded as deferred earnings.
- Earnings related scheme with redistributive elements (e.g. ceiling of maximum pension amount)
- Individual benefit or ‘family benefit’
- Means-tested guaranteed minimum pension benefit (GRAPA)
- Official retirement age is 65, but retirement is possible from 60 on
- Conventional Early Leavers Scheme (CELS)
- Disability Scheme
- Average ‘pure’ first-pillar old-age benefit: € 1,030 (for employees), € 2,272 (for civil servants) in 2007.

Pension reform

- Conditions for early retirement:

Age condition gradually increases from 60 to 62 in 2016

Minimum career length immediately increases from 35 to 38 years, and then gradually to 40 years in 2015

Most civil servants now become subject to the same conditions as employees

- Adaptation of the rules for calculating the benefit

Equivalent periods unemployed/UCA are now evaluated by the minimum right per career year

The early-retirement penalty for self-employed is reduced and abandoned for those of 63 and older, or who have a long career.

Regimes for specific civil servants (university professors!) are abandoned

The pension benefit of all civil servants younger than 50 (1/1/2012) is now based on the last 10 years of the career

Possibilities for ‘equivalent periods’ are extended for civil servants of 50 and older

An overall cap of 5 years is introduced for equivalent periods (except for ‘thematic career breaks’)

Unemployment/Conventional Early Leavers' scheme

- Unemployment

  Cohabiting with dependants, singles: 3rd period unemployment introduced after 3 years; benefit is a minimum

  Cohabiting: 2nd period becomes shorter

  Benefit increases from 60 to 65 of last earnings during the 1st period

  Benefit is decreasing over time during the 2nd period

  Age condition for seniority supplement: was 50 years of age and career of 20 years; now 55 years of age

- Conventional Early Leavers' Scheme (CELS)

  Replaced by Unemployment with Company Allowance (UCA)

  Entry conditions restricted (minimum age from 58 to 60; career condition from 35 to 40 years)

  Part-time CELS abandoned

Tango, anyone?

MALTESE (macro)

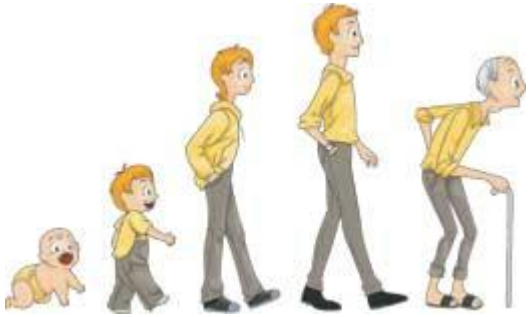
MIDAS (micro)

‘Channels of consistency’ of MIDAS with MALTESE

1. State alignment
2. Monetary alignment
3. Joint social hypotheses

MIDAS: an overview

- Starting dataset: individuals, grouped in households
  (survey, administrative data)
- Individuals pass through all stages of life:
  birth, marriage, divorce, children, widowhood, death



- Individuals find a job, lose it, become eligible to a social security benefit (or not), build up a pension...
- Individuals enter into retirement and receive a pension benefit based on their previous career

The microsimulation model MIDAS : ready to tango

- **Alignment of state variables**:
  - Procedure to have the model respect or 'mimic' exogenous aggregates while respecting individual probabilities in the occurrence of the event
    - Behavioral equation determining the probability of the transition
    - Individuals are ranked depending on the obtained probability (from the highest to the lowest)
    - The number of selected individuals reproduces targeted aggregates
- **Monetary alignment or 'amount alignment'**:
  - Proportional adjustment of first-run values of earnings to match exogenous macroeconomic productivity growth rates
- **Uprating**
  - Of social security benefits

Assumptions and hypotheses of the Study Committee on Ageing

Key demographic hypotheses	2007	2011	2030	2060
Fertility	1.81	1.84	1.86	1.77
Life expectancy at birth				
Men	77.3	78.2	81.9	86.2
women	83.3	83.4	85.8	88.8

Key macro hypotheses		2011-2017	≥ 2015
Yearly productivity		0.8% pa	1.50%
Unemployment rate		11.9 in 2017	Decreasing towards 8%

Social policy hypotheses	2010-2012	2013-2014	≥ 2015
Wage ceiling	Current legislation	agreement of December 2011	1.25%
Minimum right per working year			1.25%
Welfare adjustment non-lump-sum benefits Employed and self-employed			0.50%
Welfare adjustment of lump-sum benefits			1.00%

The impact of social security reform

Macroeconomics and labour market

Table 2 Labour market: base scenario (with reform) and impact of the structural reforms (difference between projection with and without reform in percentage point)

	Base scenario (with reforms)			Impact of reforms	
	2011	2030	2060	2030	2060
Participation rate *(labour force[a] in % of population 15-64 years)*	72.7	74.2	74.5	1.0	1.0
15-54 years	76.5	75.6	75.6	-0.2	-0.1
55-64 years	52.9	64.0	64.9	5.8	6.2
Employment rate *(total employment in % of population 15-64 years)*	64.0	68.0	68.5	0.9	1.0
15-54 years	68.3	70.0	70.2	-0.2	-0.1
55-64 years	42.0	55.1	56.3	5.2	5.6
Unemployment rate *(unemployment in % of labour force[a])*	11.9	8.5	8.0	0.1	0.0
CELS/UCA rate *(% of potential labour force[b] 50-64 years)*	8.0	5.9	5.6	-1.5	-1.5

Table 3 Macroeconomic projection: base scenario (with reform) and impact of the structural reforms (difference between projection with and without reform in %

	Base scenario (with reforms)			Impact of the reforms				
	Average annual growth rates in real terms in %						Level in %	
	2011-2030	2030-2060	2011-2060	2011-2030	2030-2060	2011-2060	2030	2060
GDP	1.6	1.7	1.7	O.07	0.00	0.03	1.3	1.4
Productivity	1.1	1.5	1.3	0.00	0.00	0.00	0.0	0.0
Employment	0.5	0.2	0.3	0.07	0.00	0.03	1.3	1.4

The impact of social security reform

Budgetary costs

Table 4 Budgetary costs of ageing: base scenario of the Study Committee of Ageing (with reform) and impact of the reforms (difference between projection with and without reform), October 2012
% of GDP

Components of the budgetary costs	Base scenario (with reforms)				Impact of reforms	
	2011	2030	2060	**2011-2060**	2011-2030	**2011-2060**
Pensions	9.9	13.6	14.5	**4.6**	-0.2	**-0.1**
- wage-earners	5.4	7.6	7.8	**2.5**	-0.2	**-0.1**
- self-employed	0.8	1.0	1.1	**0.3**	0.0	**0.0**
- civil servants	3.7	5.0	5.6	**1.8**	-0.1	**0.1**
Health Care[a]	8.0	9.4	11.0	**3.0**	0.0	**0.0**
Disability schemes	1.6	1.6	1.5	**-0.1**	0.0	**0.0**
Unemployment[b]	2.0	1.3	1.1	**-0.9**	-0.1	**-0.1**
CELS/UCA	0.4	0.3	0.3	**-0.2**	-0.1	**-0.1**
Children benefits	1.6	1.6	1.4	**-0.2**	0.0	**0.0**
Other social expenditures	1.7	1.7	1.6	**-0.1**	0.0	**0.0**
Total	25.3	29.5	31.4	**6.1**	-0.5	**-0.3**

Source: High Council of Finance, Study Committee of Ageing, Yearly Report 2012
a. Public expenditure, inclusive long-term care.
b. Inclusive time credit and career breaks

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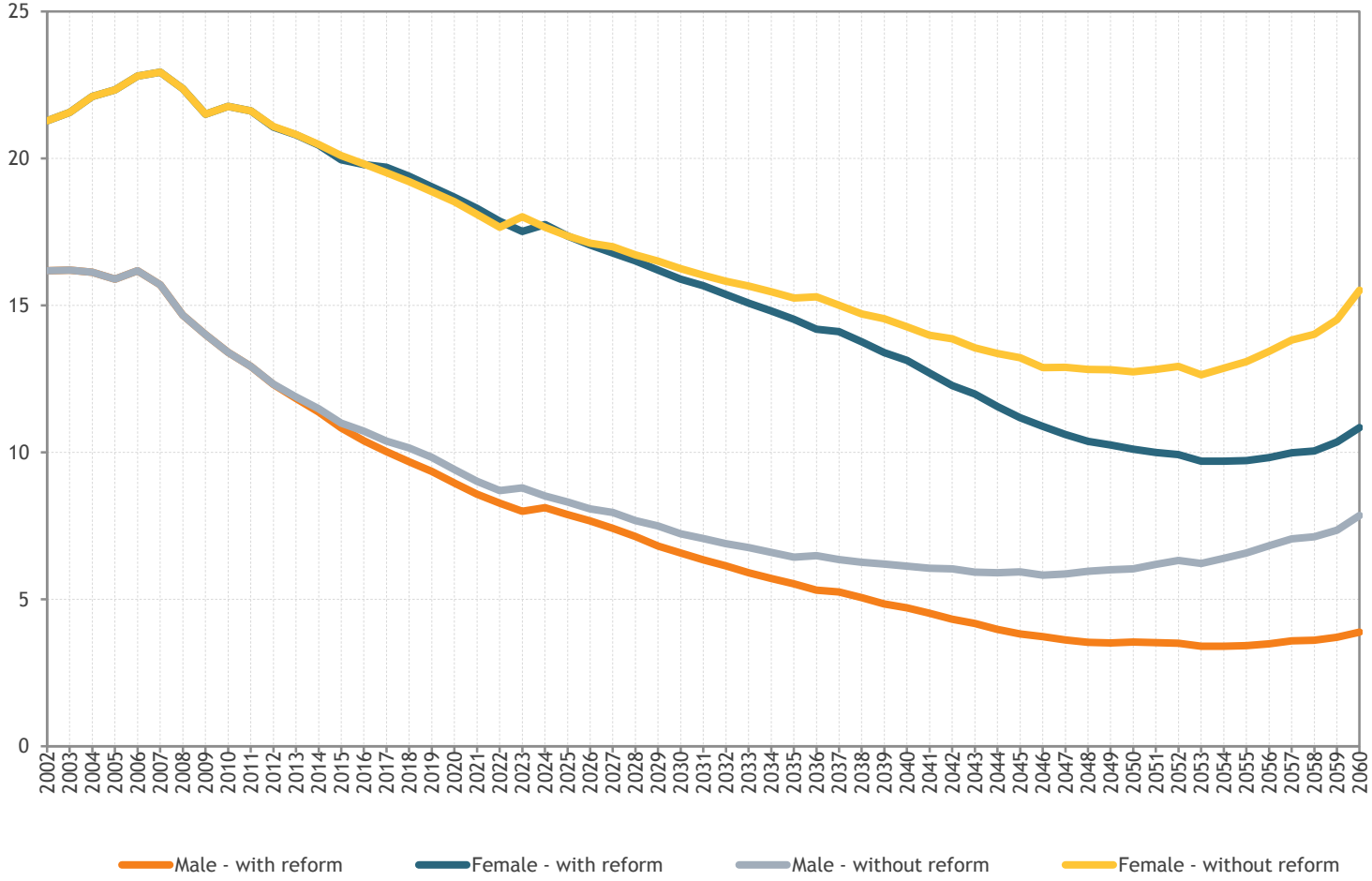
Budgetary costs

- CELS/UCA (-0.1%): reduction of beneficiaries
- Unemployment (-0.1%; especially in the long term): less career breaks, more importantly: lower benefits due to
  - Decrease of unemployment benefit with duration unemployment
  - Increased eligibility age for seniority supplement
- Pension (-0.2% middle term, -0.1% long term).
  - In the middle term the number of pensioners decreases
  - In the long term, these individuals will eventually retire and receive a higher pension benefit. In the systems of employees and self-employed, these effects cancel each other out, but in the civil servants' scheme, costs will in the long run increase.

The impact of social security reform

Social impact

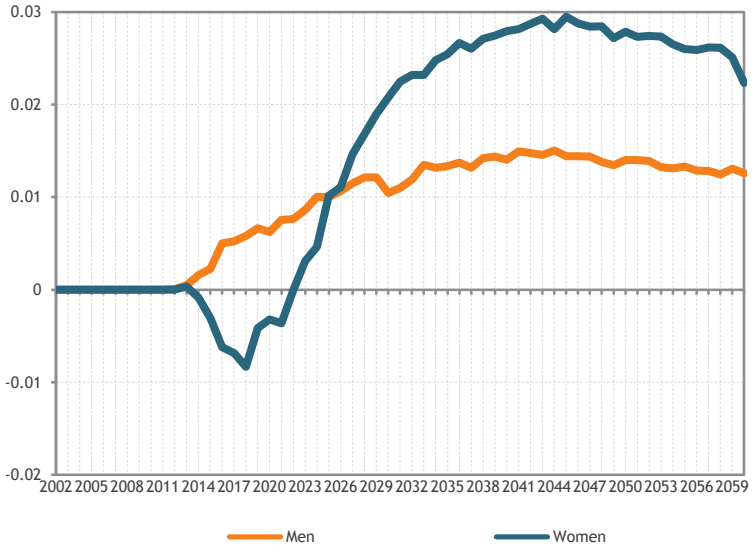
Risk of poverty rate of retirees by gender, in percent

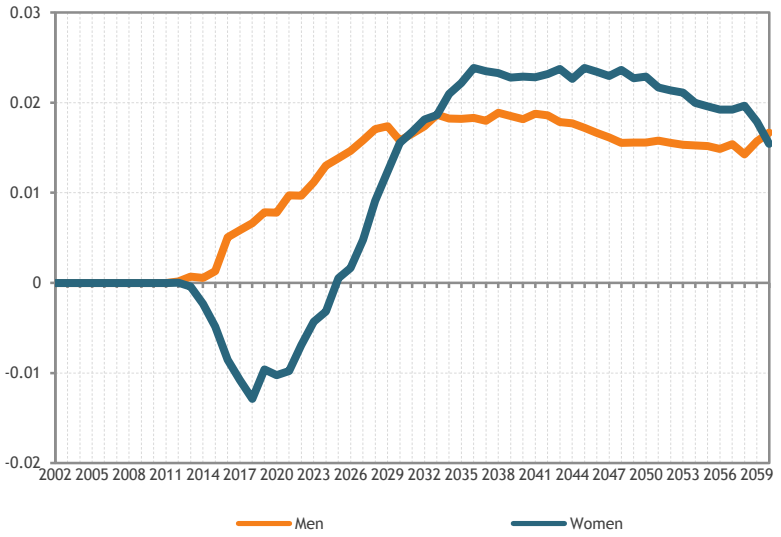


The impact of social security reform

Social impact

Development of the average net retirement benefits of pensioners, by gender (on the left) and of the average net equivalent income of pensioners, by gender (on the right), %





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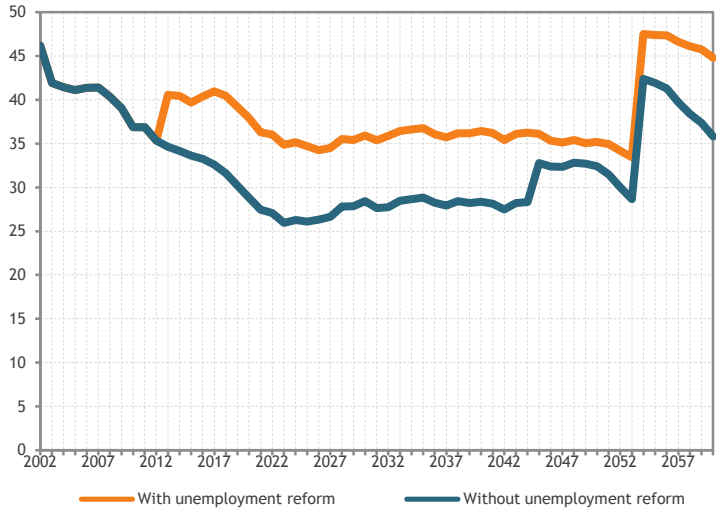
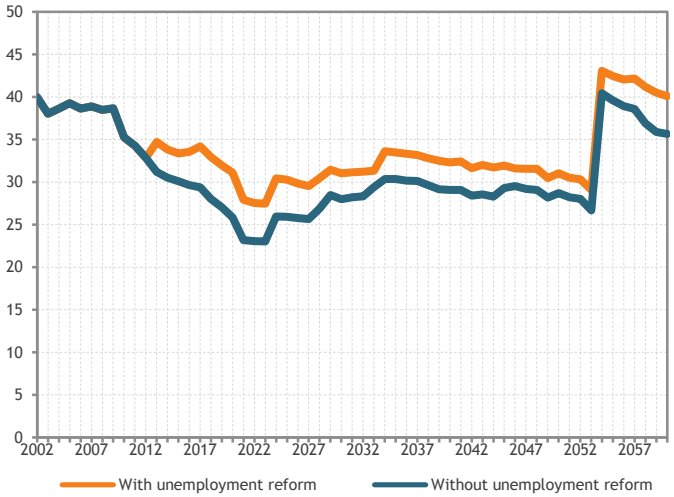
Social impact

Risk of poverty rate of unemployed computed at 70% of the equivalent income, by gender (men on the left and women on the right)





Commercial break: LIAM2

*C:\usr\midas\simulation_weight_small.yml - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

simulation_weight_small.yml | retro_mimosis.yml | simulation_weight.yml

```
                    fweight = __parent__.fweight,
                    partner_id = -1,
                    civilstate = 1,
                    collar = 0,
                    education_level = -1,
                    workstate = 5,
                    gender=choice([True, False], [0.51, 0.49]) )"

            marriage:
                - in_couple: "MARRIED or COHAB"
                - to_couple: "if((age >= 18) and (age <= 90) and not in_couple,
                              if(MALE,
                                 logit_regr(0.0, align='al_p_mmkt_m.csv'),
                                 logit_regr(0.0, align='al_p_mmkt_f.csv')),
                              False)"
#                - difficult_match: "abs(age - grpavg(age, filter=to_couple and MALE),
#                                        filter=to_couple and FEMALE)"
                - difficult_match: "if(to_couple and FEMALE,
                                       abs(age - grpavg(age, filter=to_couple and MALE)),
                                       nan)"
                #- inwork: "(workstate > 0) and (workstate <5)"
                - inwork: "WORKING"
                - partner_id: "if(to_couple,
```

Console

```
current period set to 2002

lag(workstate) |   -1 |     1 |    2 |    3 |    4 |     5 |    6 |    7 |    8 |    9 |    10 |
     workstate |      |       |      |      |      |       |      |      |      |      |       | total
             1 | 0.00 | 17.80 | 2.40 | 0.00 | 2.67 |  0.38 | 1.51 | 1.79 | 0.00 | 0.00 |  2.56 |  29.10
             2 | 0.00 |  0.04 | 1.04 | 3.05 | 0.01 |  0.05 | 0.07 | 0.06 | 0.00 | 0.00 |  0.05 |   4.37
             3 | 0.00 |  0.00 | 0.01 | 0.81 | 0.00 |  0.00 | 0.01 | 0.00 | 0.00 | 0.00 |  0.00 |   0.83
             4 | 0.00 |  0.58 | 0.24 | 2.12 | 1.93 |  0.01 | 0.26 | 0.17 | 0.00 | 0.00 |  0.67 |   5.98
             5 | 1.13 |  0.00 | 0.00 | 0.00 | 0.00 | 30.59 | 0.00 | 0.22 | 0.00 | 0.00 |  0.01 |  31.95
             6 | 0.00 |  2.64 | 0.45 | 0.02 | 1.35 |  0.53 | 2.48 | 0.00 | 0.00 | 0.00 |  0.00 |   7.48
             7 | 0.00 |  0.00 | 0.00 | 0.00 | 0.00 |  0.00 | 0.00 | 1.73 | 0.00 | 0.00 |  0.00 |   1.73
             8 | 0.00 |  0.00 | 0.00 | 0.00 | 0.00 |  0.00 | 0.00 | 0.00 | 0.84 | 0.00 |  0.00 |   0.84
             9 | 0.00 |  0.00 | 0.00 | 0.00 | 0.00 |  0.00 | 0.07 | 0.06 | 0.02 | 9.04 |  2.80 |  12.00
            10 | 0.00 |  0.00 | 0.00 | 0.00 | 0.00 |  0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  5.71 |   5.71
         total | 1.13 | 21.06 | 4.15 | 6.00 | 5.96 | 31.56 | 4.41 | 4.03 | 0.87 | 9.04 | 11.81 | 100.00

>>> groupby(workstate, lag(workstate), percent=True)
```

YAML Ain't Markup Language | length : 41564 lines : 679 | Ln : 172 Col : 52 Sel : 0 | Dos\Windows | ANSI | INS

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Conclusions

1. This paper assesses the sustainability and adequacy impact of recent social security reform in Belgium
2. **As a result of this reform, the budgetary costs of ageing are reduced by 0.3%-point GDP**, evenly distributed between pensions, unemployment and CELS/UCA.
3. In amounts (so without taking into account the increasing GDP which results from decreasing unemployment), the costs are reduced as well, but the picture is less clear-cut.
4. So the impact of the reform is mainly via the higher employment rate and the resulting higher GDP growth rate.
5. The risk of poverty of pensioners decreases as a result of the reform. This effect is faster for men than for women
6. The poverty risk for (male!) unemployed increases considerably
7. **The reform thus reinforces the existing AROP profiles between the unemployed and retired**
8. *Interested in microsimulation? You really ought to try LIAM2!*

Thank you

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